

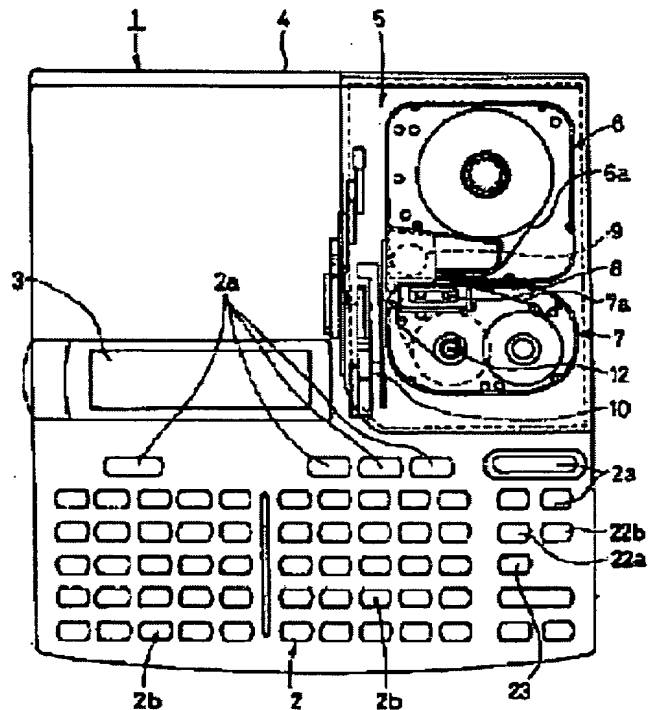
TAPE PRINTER

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Abstract of JP9104135

PROBLEM TO BE SOLVED: To rapidly move a cursor and to enhance the operability of searching and editing by providing the cursor quick feed means moving the cursors at every plurality of blocks held to an internal memory to a keyboard. **SOLUTION:** In a tape printer 1, jump keys 22a, 22b (cursor quick feed means) for moving the cursor to either one a directly preceding punctuation character or directly succeeding one while setting the punctuation between character row blocks as a mark reference point are provided to a keyboard 2 other than a cursor moving key moving the cursor at every one character. The jumping of the cursors is not necessarily performed at every one punctuation mark and, by continuously pushing either one of the cursor jump keys 22a, 22b, two or a desired more number of cursors can be jumped. By this constitution, the searching and correction of a character can be rapidly performed.



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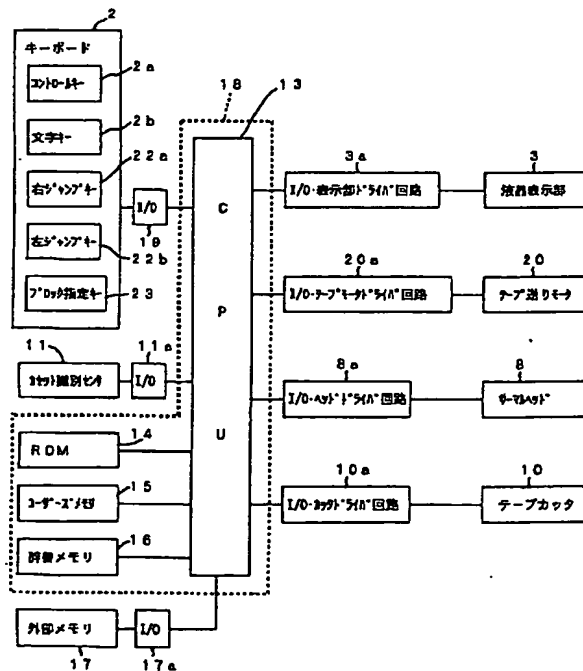
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(54) 【発明の名称】 テーププリンタ

(57) 【要約】

【課題】 カーソル操作の迅速なテーププリンタの開示

【解決手段】 複数の文字列からなるブロックが、隣り合うブロック同士の区切り記号を介在させてユーザーズメモリ15に複数個保持されると共に、このユーザーズメモリ15に保持されているブロックを表示する液晶表示部3に、ユーザーズメモリ15に保持されたブロックのうちの少なくとも1のブロックと、区切り記号Pと、カーソルKとが表示されるテーププリンタにおいて、キーボード2は、ユーザーズメモリ15に保持された複数のブロックごとにカーソルKを移動するカーソルのジャンプキー22a、22bを有することを特徴とする。



【特許請求の範囲】

【請求項 1】 複数の文字列からなるブロックが、隣り合うブロック同士の区切り記号を介在させて内部メモリに複数個保持されると共に、この内部メモリに保持されているブロックを表示する表示部に、前記内部メモリに保持されたブロックのうちの少なくとも 1 のブロックと、前記区切り記号と、キーボードの文字の入力位置を示すカーソルとが表示されるテーププリンタにおいて、前記キーボードは、前記内部メモリに保持された複数のブロックごとにカーソルを移動するカーソルの早送り手段を有することを特徴とするテーププリンタ。

【請求項 2】 請求項 1 のテーププリンタにおいて、前記キーボードは、前記内部メモリに保持された複数のブロックの順位又は文字列の何れかを指定して、この指定された順位又は文字列を有するブロックにカーソルを早送りする指定手段を有することを特徴とするテーププリンタ。

【請求項 3】 請求項 1 又は請求項 2 の何れかのテーププリンタにおいて、前記表示部に前記カーソルが位置する文字列のブロックの順位を表示する順位表示部が設けられていることを特徴とするテーププリンタ。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、ラベルやテープ等のようにプリントされた断片を形成可能なテーププリンタに関する。

【0002】

【従来の技術】 従来から、送配電設備の配電盤などの個々の端子に、定められた電線を誤りなく接続するために、端子と電線との両者にそれぞれにラベルなどを設けておき、接続の際の照合手段とすることが知られている。

【0003】 近時、このような照合のために、剥離紙付きの粘着テープや電線用チューブに文字や記号等を印字してラベルを形成するテーププリンタが市販されている。

【0004】 この種のテーププリンタは、粘着テープや電線用チューブのカセットと、インクリボン及びサーマルヘッドからなる印字装置と、テープ及びインクリボンの走行制御ならびにサーマルヘッドの発熱制御を行う印字制御装置と、印字制御装置に命令及びデータを入力するキーボードと、キーボードから入力された文字列を表示する液晶表示部とを備えている。

【0005】 このテーププリンタは、ラベルの長手方向の長さ及び幅と、1 枚のラベル内に印字する文字列の長さ等を設定可能であり、剥離紙テープ或いは電線被覆チューブに、ラベルごとの連続番号を印字したり、一定ピッチで印字できるようになっている。また、このテーププリンタは、ラベルへの印字文字列の書式を設定するモードにおいて、ラベルの長手方向の長さ、1 枚のラベル

に印字される文字列の長さ、文字サイズ、書体、印字行数、印字回数等を設定することにより、同一文字データが設定回数印字される。また、文字列の中に数字が印字される場合、ラベルの順番の増減に対応して印字される数字が増減するように書式設定できるようになっており、この書式設定後に文字データを入力すると、ラベルの印字順番に対応して印字文字列に連番が印字される。

【0006】 テーププリンタの液晶表示部は、表示される文字列が 5 ～ 10 文字程度の大きさであって、キーボードからの入力される文字が増えるにつれて、前に入力された文字は液晶表示部の右側から左側に移動してゆくようになっており、入力文字の数が液晶表示部の表示限界を超えると、前に入力された文字は液晶表示部の左側の枠から消えてゆき、次々と新しい文字を液晶表示部の右側に入力できるようになっている。一方、カーソルを液晶表示部の左側の枠に移動させると、次々と先に入力した文字列が表れてくる

【0007】

【発明が解決しようとする課題】 ところで、多数のラベルへの文字入力作業を行う場合、先に入力したラベルの文字列ブロックの内容を確認したり、すでに使用している文字列のブロックを検索する必要が生ずる。

【0008】 このような場合、従来のテーププリンタでは、カーソルを液晶表示部の左側の縁に移動させれば、先に入力した文字列が一文字ずつ表れるが、ブロックの数が 30 ～ 100 等の多数に及ぶと、なかなか目的とするラベルにカーソルを移動できなかったり、途中のブロックから最後尾のブロックにカーソルを移動させるのに時間がかかったり、カーソルが位置するブロックの順位が不明になるという不具合がある。

【0009】 本発明のテーププリンタは、このような問題に着目したものであり、カーソルのブロック間の移動をより早く俊敏に行うことを可能にすると共に、カーソルを移動させた時にカーソルの位置するブロックの順位を確認できて、検索、編集等の操作性を向上させることを目的とする。

【0010】

【課題を解決するための手段】 上記の課題を解決するために、本発明の請求項 1 のテーププリンタは、複数の文字列からなるブロックが、隣り合う文字列のブロック同士の区切り記号を介在させて内部メモリに複数個保持されると共に、この内部メモリに保持されているブロックを表示する表示部に、前記内部メモリに保持されたブロックのうちの少なくとも 1 のブロックと、前記区切り記号と、キーボードの文字の入力位置を示すカーソルとが表示されるテーププリンタにおいて、前記キーボードは、前記内部メモリに保持された複数のブロックごとにカーソルを移動するカーソルの早送り手段を有することを特徴とする。

【0011】 請求項 1 のテーププリンタによれば、プロ

ックごとにカーソルを移動させるので、先に入力したブロックの読み出し、ならびに、その後の後側のブロックへのカーソルの移動が俊敏に行え、操作性が向上する。

【0012】また、本発明の請求項2のテーププリンタは、請求項1のテーププリンタにおいて、前記キーボードは、前記内部メモリに保持された複数のブロックの順位又は文字列の何れかを指定して、この指定された順位又は文字列を有するブロックにカーソルを早送りする指定手段を有することを特徴とする。

【0013】請求項2のテーププリンタによれば、複数のブロックのうち順位又は文字列の何れかを指定してカーソルを早送りするので、所望の順位又は文字列を有するブロックに即座に移動できる。

【0014】さらに、請求項3のテーププリンタは、請求項1又は請求項2の何れかのテーププリンタにおいて、前記表示部に前記カーソルが位置する文字列のブロックの順位を表示する順位表示部が設けられていることを特徴とする。

【0015】請求項3のテーププリンタによれば、カーソルが位置するブロックの順位を常時確認できる。

【0016】

【実施の形態】以下、この発明の実施形態のテーププリンタを図面に基づいて説明する。

【0017】図7は、この実施形態のテーププリンタの外観を示す。このテーププリンタ1は、キーボード2及び液晶表示部3が外装ケース4に一体に形成されており、外装ケース4の右側上部に印字部5が設けられている。印字部5には、テープカセット6とインクリボンカセット7とが設けられている。テープカセット6のテープ6aとインクリボン7aはサーマルヘッド8とプラテンローラ9との間に案内されている。インクリボン7aの側にはサーマルヘッド8が配設され、テープ6a側にはプラテンローラ9が配設されている。サーマルヘッド8とプラテンローラ9の下流側には、テープカッター部10が配設されている。

【0018】テーププリンタ1の電源は電池、外部電力の選択が可能であり、ケース4内には、後述する印字制御部、インターフェース、モータドライバ回路、モータ、駆動機構、電源その他が配設されている。

【0019】テープ6はここでは、シリコンペーパーなどの剥離紙上に粘着剤を介してラベル用の紙が貼り付けられたもので、ラベル用の紙部分のみに切り込みが形成されるが、ラベルを形成するための印字対象としては、テープカセットに収納された剥離紙付き粘着テープや、チューブカセットに収納された電線用チューブがある。なお、予めラベル状に形成されたラベルを一定ピッチで剥離紙に貼り付けたラベル紙であってもよい。

【0020】テープカセット6或いは電線用のチューブカセットのカセット本体には、内蔵するテープやチューブの種類や幅などの識別情報を表す識別穴、識別コー

ド、ラベル等の識別手段が記録されている。テーププリンタ1のカセットホルダー部には、リミットスイッチやホトセンサなどによってカセット本体の識別手段を読み取るカセット識別センサ11が設けられている。テープカッター部10では剥離紙上のラベル用の紙のみを切るハーフカットを行うこともできる。12はインクリボン7aの巻取り軸である。

【0021】テーププリンタ1のCPU13は例えば16ビットのマイクロコンピュータで構成され、このCPU13には、図1に示すように、オペレーションシステムやラベル形成用のメインプログラム並びにメインプログラムを自動的に立ち上げる自動実行プログラムを記憶するROM14とともに、メインプログラム及び読み込んだファイルデータ或いはキーボード2からの入力操作中のデータ等を保持するユーザーズメモリ15（内部メモリ）や、文字・数字・記号・図形・特殊記号等を記憶した辞書メモリ16が備えられている。

【0022】更に、CPU13には、作成した多数のラベルについて、一つのラベルに関して印字される文字列及び印字書式をファイルデータとして記憶する外部メモリ17がインターフェース17aを介して接続されている。この実施の形態では、CPU13と、ROM14、ユーザーズメモリ15、辞書メモリ16とによって印字制御部18が構成されている。

【0023】CPU14への入力手段としては、インターフェース19を介してキーボード2と、インターフェース11aを介してカセット識別センサ11とがCPU13に接続されている。CPU14には、出力手段として、液晶表示部3、テープ送りモータ20、サーマルヘッド8、テープカッタ10が、それぞれ表示部ドライバ回路3a、テープモータドライバ回路20a、ヘッドドライバ回路8a、テープカッタドライバ回路10aを介して接続されている。なお、これらの表示部ドライバ回路3a、テープモータドライバ回路20a、ヘッドドライバ回路8a、テープカッタドライバ回路10aはCPU13との信号の入出力のためのインターフェースを備えている。

【0024】テーププリンタ1は、電源への接続とメインスイッチのオンにより、ROM14のラベル形成用のメインプログラムが自動的にユーザーズメモリ15に読み出されて立ち上がる。このメインプログラムは、印字するラベルの文字列を入力する入力モードと、外部メモリ17とユーザーズメモリ15（内部メモリ）との間で文字列データファイルを入出力するファイル管理モードと、ユーザーズメモリ15に記憶された入力文字を印字する印字モードと、入力文字の書式設定モードとを有している。

【0025】入力モードには、予め1枚のラベルの大きさ、印字文字の大きさ、1枚のラベル内の文字列の数、1枚のラベル内の印字範囲並びに印字位置に関して標準

書式が設定されており、テブプリンタ1は、立ち上がり後すぐに標準書式の入力モードになる。入力モードは、ファンクションキーやその他のコントロールキー2aにより、ファイル管理モード、印字モード、書式設定モードに変更でき、標準書式は文字入力後に書式変更も出来るようになっている。

【0026】入力モードにおいては、図2(a)に示すように、標準書式或いは変更された書式に基づいて、キーボード2の文字キー2bから入力された文字列のブロック(例えばA10, A12, A13...)と、隣り合うブロック(例えば, A12とA13)同士の区切り記号Pと、当該文字列の書式がユーザーズメモリ15に一時的に記憶される。

【0027】この実施形態では、液晶表示部3には2個のブロックの文字列とが表示され、区切り記号Pは文字列のブロックの前に表示される。液晶表示部3には、図2(a)~図4(b)に示すように、液晶表示部3にブロックの順位表示部Mが設けられ、ユーザーズメモリ15に保持・記憶された文字データのうちカーソルKで指摘された文字データが表示され、カーソルKと、隣り合う文字列のブロック同士を区切る区切り記号Pと、カーソルが位置する文字列のブロックの順位とが表示される。

【0028】ブロック順位は、図2(a)に示すように、カーソルKの位置する文字列例えば「A13」のブロックの記憶された順位(例えば28)がブロック順位として順位表示部Mに表示され、カーソルKが一つ前のブロックに移動すれば、図2(b)に示すように、順位表示部Mには(27)が表示され、カーソルKが一つ後のブロックに移動すれば、図2(c)に示すように、順位表示部Mには(29)が表示される。

【0029】キーボード2には、例えばJISコード又はASCIIコード等に基づくシフトキーやエスケープキー等のようなコントロールキー2aと、アルファベットや数字の文字キー2b等のいわゆるパーソナルコンピュータ等に設けられている操作キーが設けられている。

【0030】このキーボード2には、一文字ごとにカーソルを移動させるカーソル移動キーのほかに、文字列ブロック間の区切り記号P_nを基準点として、一つ前の区切り記号P_{n-1}、或いは一つ後の区切り記号P_{n+1}の何れかにカーソルKを移動させるジャンプキー22a, 22b(カーソルの早送り手段)と、カーソルKを特定のブロックにジャンプさせるためにブロックを指定するブロック指定キー23(指定手段)とが設けられている。

【0031】なお、ここで区切り記号Pの添字のnの値は、ユーザーズメモリ15に保持されている文字列のブロックの順位番号であって順位表示部Mに表示される番号であり、ラベルに印字される数値(例えばA01, A02...)の番号とは必ずしも一致しない。

【0032】ここで、ブロック間のカーソルジャンプモ

ードの表示状態及び流れ図を図2(a), (b),

(c)並びに図5に基づいて説明する。このブロック間のカーソルジャンプモード並びに後述する順位指定又は文字列指定のカーソルジャンプモードは、文字入力モード下で行われ、それぞれのカーソルジャンプモードが終了すると再び文字入力モードに戻る。

【0033】文の先頭方向へ戻るカーソルのジャンプキー22aを入力すると(S. 1)、液晶表示部3の左側に区切り記号P_{n-1}が存在するかどうか検索し(S.

2)、区切り記号P_{n-1}が存在しなければ(S. 3)、ジャンプ処理は終了する(S. 5)。液晶表示部3の左側に区切り記号P_{n-1}が存在すれば(S. 3)、図2

(b)に示すように、その区切り記号P_{n-1}にカーソルKを移動し、そのブロックの文字列と順位表示部Mに順位番号を表示して(S. 4)、処理を終了する(S. 5)。

【0034】文の後方へ戻るカーソルジャンプキー22bを入力すると(S. 1)、液晶表示部3の左側に区切り記号P_{n+1}が存在するかどうか検索し(S. 2)、区切り記号P_{n+1}が存在しなければ(S. 3)、ジャンプ処理は終了する(S. 5)。液晶表示部3の左側に区切り記号P_{n+1}が存在すれば(S. 3)、図2(c)に示すように、その区切り記号P_{n+1}にカーソルKを移動し、そのブロックの文字列及び順位番号を表示(S. 4)して終了する(S. 5)。

【0035】なお、この実施の形態では、文字列の先頭方向或いは後尾方向にカーソルKを移動する場合に、カーソルKの停止位置は区切り記号Pに停止するが、文字列の下に停止しても良い。また、カーソルKのジャンプは、1個の区切り記号Pごとに行うことに限らず、カーソルジャンプキー22a又は22bの何れかを押し続けることにより、2個或いはそれ以上の所望の個数でジャンプさせても良い。このような、カーソルKのジャンプを行うことにより、文字の検索・修正操作を行うことができる。

【0036】次に、順位指定又は文字列指定のカーソルジャンプモードについて説明する。

【0037】このテブプリンタ1は、前述のジャンプモードのほかに、指定順位のブロック又は特定の文字列を含むブロックへカーソルKを移動させるブロック指定モードを有する。この順位指定又は文字列指定のカーソルジャンプモードは、ジャンプキー22a, 22bの何れかのキー操作と組み合わせて行って(例えば、ジャンプキー22a, 22bの何れかを押しつつブロック指定キー23を押す)もよいが、操作の平易さ及び俊敏性からすると、ブロックのジャンプモードから独立したモードでもよい。この実施の形態では、前述のブロックのジャンプモードとは独立したモードで構成されている。

【0038】液晶表示部3の表示状態が図3(a)に示す状態にあるとき、図6の流れ図に示すように、ブロッ

ク指定キー 23を押すと (S. 6), 図 3 (b) に示すように、液晶表示部 3 に特定の順位のブロックに移動するか、又は特定の文字列のブロックに移動するかを選択表示が表れる (S. 7)。この選択操作は、例えば、キーボード 2 のキーのうち、文字列の 1 文字ずつカーソル K を移動させるキーの前後操作により行う。

【0039】ここで、カーソル K を特定順位のブロックの区切り記号 P_n にジャンプさせる順位選択モードを選択すると (S. 8), 液晶表示部 3 の文字枠 3 a がブロック番号の指定欄 A に移動し、区切り記号 P_n の n の順位番号を入力するモードとなる (S. 9)。キーボード 2 の文字キー 2 b により指定欄 A に所望の数値 (例えば 16) を入力して実行キーを押すと、ユーザーズメモリ 15 に保持された入力順位 (16 番目) の文字列のブロックの検索を行う (S. 10)。該当する順位のブロックがあれば (S. 11), 図 3 (c) に示すように、当該順位のブロックにカーソル K が移動して該当ブロック及び順位番号 (16) を表示して (S. 15), 順位選択モードは解除され、文字入力モードに戻る (S. 17)。ステップ 11 で該当順位のブロックがなければ、該当ブロックなしの表示を液晶表示部 3 に表示して (S. 16), 順位選択モードは解除されて文字入力モードに戻る (S. 17)。

【0040】ステップ 8 の選択において、前述のキー操作によりカーソル K を特定の文字列のブロックにジャンプさせる文字列選択モードを選択すると、文字列を検索するモードとなる (S. 12)。キーボード 2 の文字キー 2 b により、図 4 (a) に示すように、所望の文字列 (例えば C01) を文字列記入欄 B に入力して実行キーを押すと、ユーザーズメモリ 15 に保持された文字列のうち指定された文字列 (C01) の検索を行う (S. 13)。この検索において該当する文字列のブロックがあれば (S. 14), 図 4 (b) に示すように、当該順位のブロックにカーソル K が移動して該当文字列を表示すると共に、その文字列のブロックの順位番号 (例えば 50) を順位表示部 M に表示する (S. 15)。ステップ 13 の検索において、該当する文字列のブロックがなければ (S. 14), 該当ブロックなしの表示を液晶表示部 3 に表示して (S. 16), 文字列選択モードは解除され、文字入力モードに戻る (S. 17)。

【0041】この実施の形態では、カーソルジャンプキー 22 a, 22 b 及びブロック指定キー 23 とを独立してキーボード 2 に設けたが、キーボード 2 中のキーの組み合わせ、例えば、シフトキーと文字キー 2 b の何れかの組み合わせ、或いはエスケープキーなどの各種モード選択キーとの組み合わせにより、カーソル K のジャンプ移動を行っても良い。ただし、この実施の形態のテーププリンターのように、専門のジャンプキー 22 a, 22 b, 23 を設定しているほうが、編集モードの変換と選択操作を要しないので、カーソル K のジャンプ操作が早

く、使用しやすい。

【0042】書式設定モードは、コントロールキー 2 a 中のファンクションキー或いはキーボード 2 のキー操作により行われ、液晶表示部 7 に設定メニューが表示される。書式設定モードでは、ラベルの種類、ラベル長、ラベルの幅、ラベルに印字する文字の大きさ、1 ラベル中に印字する文字列ブロックの文字数、ラベルにおける文字列の印字位置・印字行数、文字列の間隔、ラベルの連続印刷、連番印刷、印字部数などが設定可能になっているが、メインプログラムに標準書式が予め設定されている。

【0043】例えば、標準書式においては、標準的ラベルの大きさを幅 11 mm, 長さ 20 mm とすると、この標準的なラベル中における文字列行数 1 行、文字列 10 字、文字の大きさ 10 ポイント等が予め設定されており、この標準的なモードによって印字されるようになっている。もちろん、この書式設定モードは、カセット識別センサ 11 によって識別されるラベルの大きさに基づいて自由に設定できると共に、一つのテープ或いは電線用チューブにおいて、多数のラベルが印字される場合に、印字されるテープ、チューブなどが同じ場合に、ラベル長や文字列長、印字位置等が異なる複数種類の書式を設定して、ラベルの順番によって書式を変えることができるようになっている。設定された書式及び文字データ等はユーザーズメモリ 15 に格納される。これらの書式設定を頻繁に行うために、ラベル長や文字列長、印字位置等の書式変更専用のキーを設けても良い。

【0044】印字モードでは、何枚目から何枚目までの印字するかというラベルの指定、印字部数、印字するラベルの初期値、ラベルの境界線上に縦線を印刷する境界線印刷、テープ 6 a のカットの有無、或いは剥離紙付き粘着テープの粘着テープのみを切断するハーフカットの有無等を設定できる。

【0045】キーボード 2 のコントロールキー 2 a の操作により印字モードを選択して印字を実行すると、印字部 5 のテープ 6 a とインクリボン 7 a とが同期走行してサーマルヘッド 8 とプラテンローラ 9 の間に送られ、ユーザーズメモリ 15 に保持されたラベルの文字列がテープ 6 a に印字される。なお、印字モードにおいて、境界線表示やカット又はハーフカット等が選択されていると、テープ 6 a に印字された後に、カッター部 10 においてテープ 6 a のカット又はハーフカット或いは縦線印刷がなされる。

【0046】印刷実行において、CPU 13 は、テープ送りモータ 20 及びインクリボン送りモータを同期走行させるためのモータドライバ回路 9、ヘッドドライバ回路 12 を介して、テープ 6 a 及びインクリボン 7 a の送り制御ならびにサーマルヘッド 9 の発熱制御を行う。印字モードにおいては、テープ 6 a 或いは電線用チューブとインクリボン 7 a とが同期して送られると共に、ヘッ

ドドライバ回路8aによりサーマルヘッド8の発熱素子が発熱制御される。なお、サーマルヘッド8の発熱素子はテープ6aの幅方向に並んでおり、テープ6aとインクリボン7aの送り速度に対応して文字列を印字する。インクリボン7aからテープ6aに熱転写される文字は、この実施形態では記号、外字記号、図形、画像、網掛けなどの制御データ等を含まれる。なお、サーマルヘッドの代わりにインクジェット式ヘッドや、ワイヤドット式ヘッド等で印字しても良い。

【0047】印字後には、印字モードにて設定されたとおり、テープ6a或いは電線用チューブなどを所定の切断位置で切断し、又は切断しない。ラベルの印字において、ハーフカットモードを選択した場合には、CPU13がカッタドライバ回路10aを制御してテープ6aの粘着紙部分を切断し、剥離紙部分は切断しない。ハーフカットによりテープ6a或いは電線用チューブがラベルとして分離されるので、電線端部への装着作業を容易に行える。

【0048】なお、本発明のラベル印字装置は、上述した一実施形態のテーププリンタに限定されるものではなく、印字制御部の構成は種々の改変が可能であるが、本発明の主要構成を有する限り、それらにも及ぶものであることは言うまでもない。

【0049】

【発明の効果】本発明の請求項1のテーププリンタによれば、文字列の入力操作において、文字列のブロックの区切り記号ごとにカーソルを移動させるので、先に入力したブロックの読み出し、ならびに、その後の後側のブロックへのカーソルの移動が俊敏に行え、検索、編集等の操作性を向上させることができる。

【0050】また、本発明の請求項2のテーププリンタのように、内部メモリに保持された複数の文字列のブロックを指定して、この指定したブロックにカーソルを早送りする指定手段を設け、ブロックを指定してカーソルを早送りすると、所望の順位又は文字列を有するブロックを即座に確認出来る。

【0051】請求項3のテーププリンタのように、請求項1又は請求項2の何れかのテーププリンタにおいて、表示部に前記カーソルが位置する文字列のブロックの順位を表示する順位表示部が設けられていると、カーソルが位置するブロックの順位を常時確認でき、操作性が向上する。

【図面の簡単な説明】

【図1】本発明の1実施の形態にかかるテーププリンタのブロック回路図

【図2】図2(a)は液晶表示部に表示される文字列のブロックとカーソルの説明図

図2(b)は(a)のカーソルを前方向に1ブロック移動させた状態の説明図

図2(c)は(a)のカーソルを後方向に1ブロック移動させた状態の説明図

【図3】図3(a)はブロック指定キーの指定ブロックにジャンプさせる前の液晶表示部の表示例

図3(b)はブロック指定キーをオンさせて順位を入力したときの液晶表示部の表示例

図3(c)はブロック指定キーの指定ブロックにジャンプさせたときの液晶表示部の表示例

【図4】図4(a)はブロック指定キーをオンさせて、検索文字を指定したときの液晶表示部の表示例

図4(b)はブロック指定キーの指定検索文字にジャンプさせたときの液晶表示部の表示例

【図5】カーソル早送りモードにおけるプログラムの流れ図

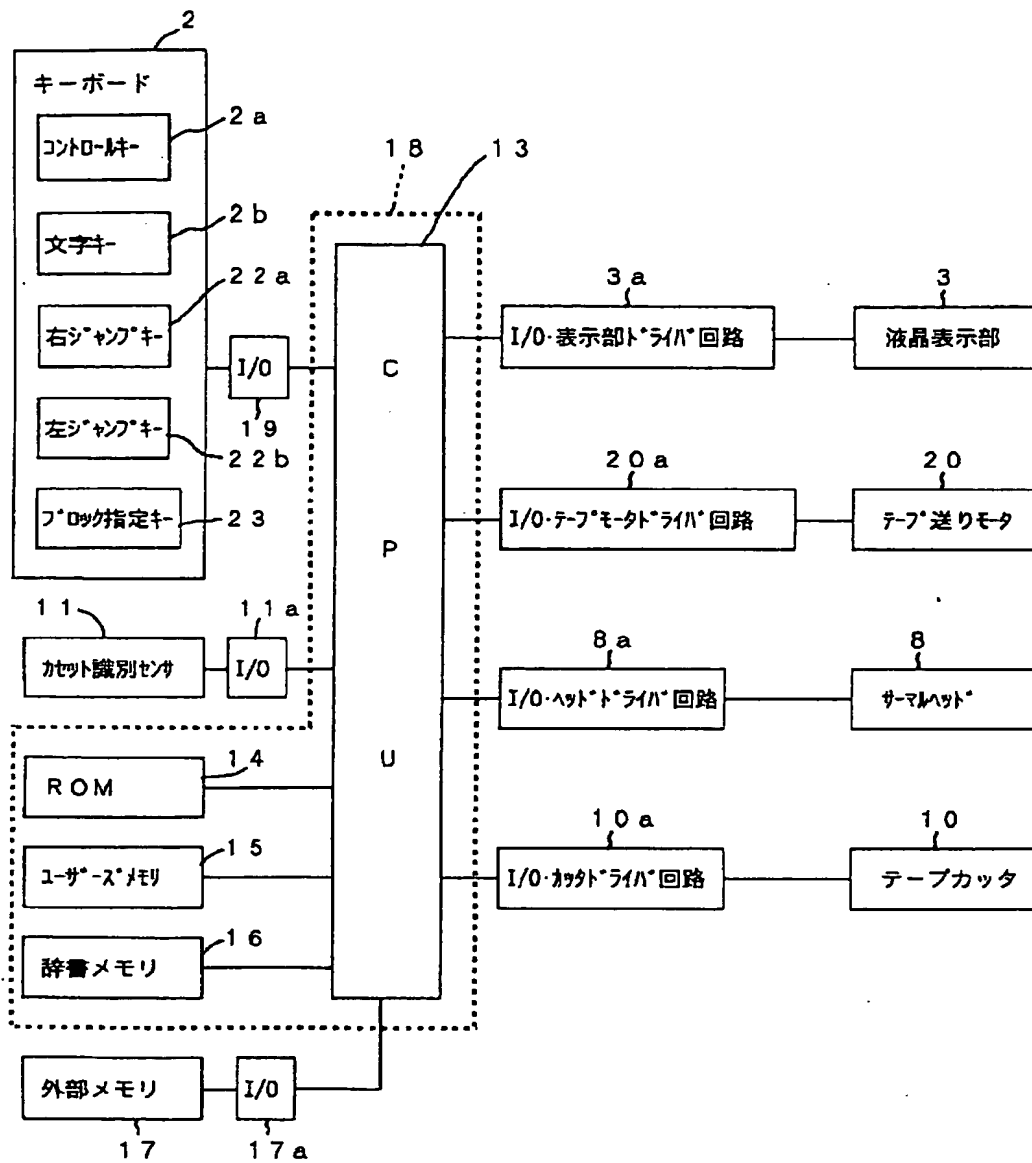
【図6】カーソル早送りモードであってブロック順位指定におけるプログラムの流れ図

【図7】本発明の実施の形態におけるテーププリンタの外観構成を示す図

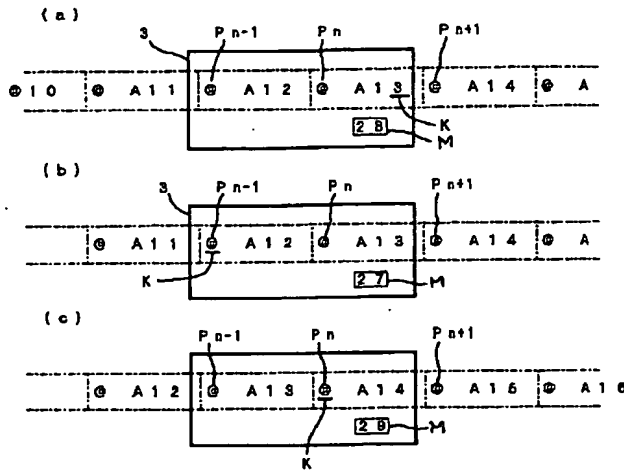
【符号の説明】

- 1 テーププリンタ
- 2 キーボード
- 3 液晶表示部
- 4 外装ケース
- 5 印字部
- 6 テープカセット
- 7 インクリボンカセット
- 8 サーマルヘッド
- 9 プラテンローラ
- 10 テープカッタ
- 13 CPU
- 14 ROM
- 15 ユーザーズメモリ (内部メモリ)
- 17 外部メモリ
- 22a 左ジャンプキー
- 22B 右ジャンプキー
- 23 ブロック指定キー

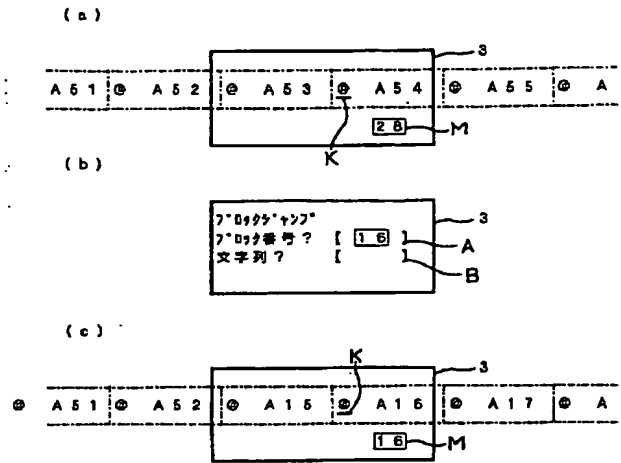
【図1】



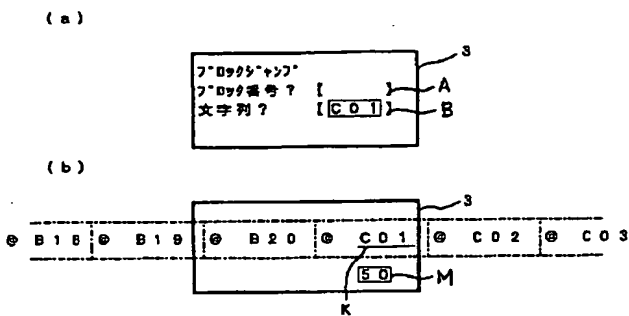
【図 2】



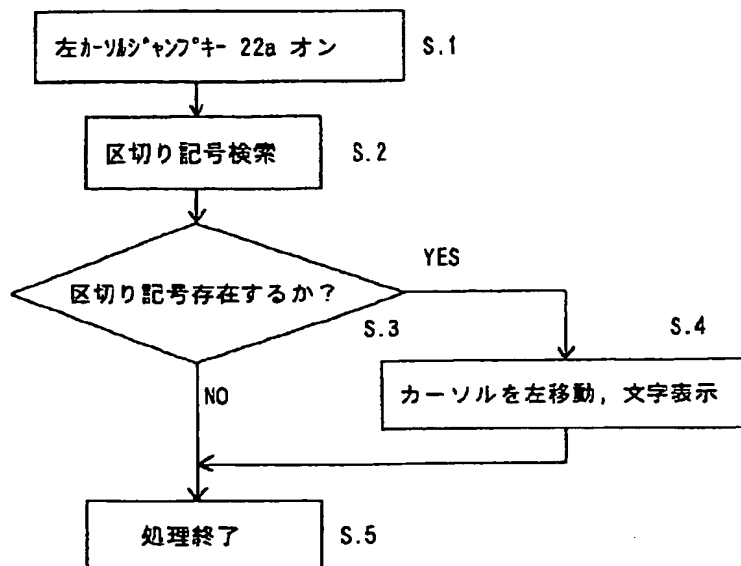
【図 3】



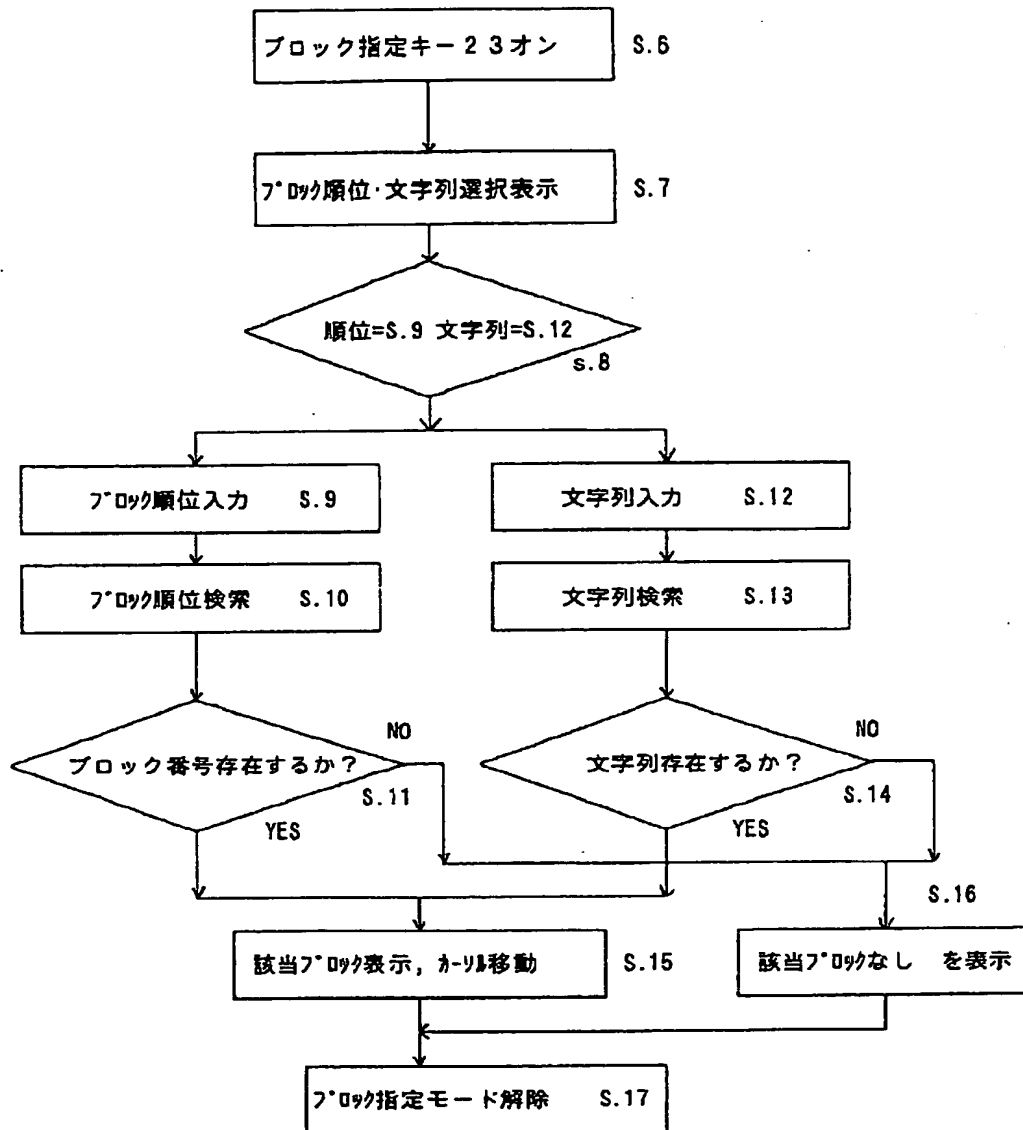
【図 4】



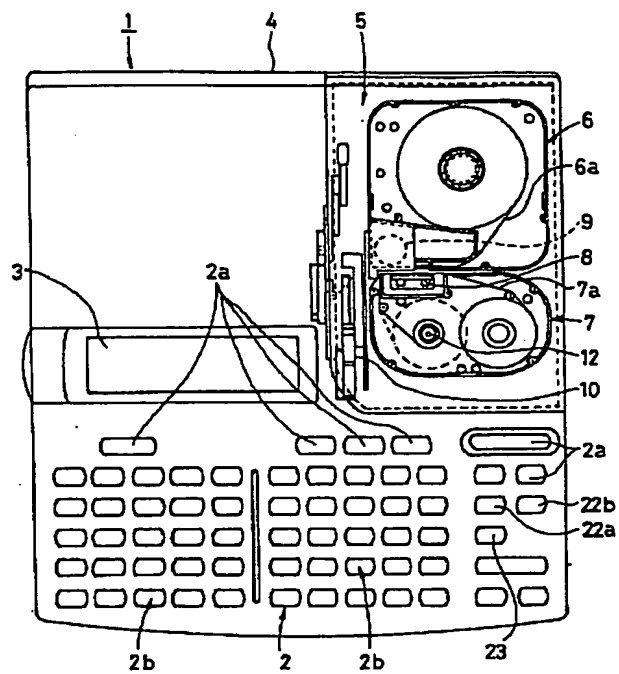
【図 5】



【図 6】



【図 7】



PATENT ABSTRACTS OF JAPAN

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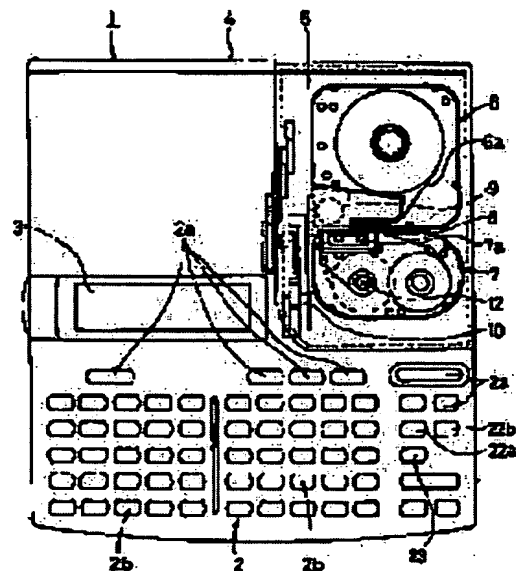
(72)Inventor : KANO TOSHIYUKI

(54) TAPE PRINTER

(57)Abstract:

PROBLEM TO BE SOLVED: To rapidly move a cursor and to enhance the operability of searching and editing by providing the cursor quick feed means moving the cursors at every plurality of blocks held to an internal memory to a keyboard.

SOLUTION: In a tape printer 1, jump keys 22a, 22b (cursor quick feed means) for moving the cursor to either one a directly preceding punctuation character or directly succeeding one while setting the punctuation between character row blocks as a mark reference point are provided to a keyboard 2 other than a cursor moving key moving the cursor at every one character. The jumping of the cursors is not necessarily performed at every one punctuation mark and, by continuously pushing either one of the cursor jump keys 22a, 22b, two or a desired more number of cursors can be jumped. By this constitution, the searching and correction of a character can be rapidly performed.



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CLAIMS

[Claim(s)]

[Claim 1] While the block which consists of two or more character strings makes the delimiter of adjacent blocks intervene and are held at an internal memory, [two or more] The block of at least 1 of the blocks held at said internal memory at the display which displays the block currently held at this internal memory, It is the tape printer characterized by having a rapid-traverse means of the cursor which moves cursor for two or more blocks of every by which said keyboard was held at said internal memory in the tape printer by which said delimiter and the cursor which shows the input location of the alphabetic character of a keyboard are displayed.

[Claim 2] It is the tape printer characterized by having an assignment means to fast forward cursor to the block which specifies any [the ranking of two or more blocks with which said keyboard was held in the tape printer of claim 1 at said internal memory, or] of a character string they are, and has this specified ranking or character string.

[Claim 3] The tape printer characterized by preparing the ranking display which displays the ranking of the block of a character string with which said cursor is located in said display in which tape printer of claim 1 or claim 2.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the tape printer which can form the fragment printed like the label or the tape.

[0002]

[Description of the Prior Art] In order to mistake the defined electric wire for each terminals, such as a switchboard of a power-transmission-and-distribution facility, and to connect with them from the former that there is nothing, the label etc. is prepared in both terminal and electric wire at each, and considering as the collating means in the case of connection is known.

[0003] The tape printer which prints an alphabetic character, a notation, etc. in adhesive tape and the tube for electric wires with a releasing paper, and forms a label recently for such collating is marketed.

[0004] This kind of tape printer is equipped with the cassette of adhesive tape or the tube for electric wires, the printer which consists of an ink ribbon and a thermal head, the printing control device which performs transit control of a tape and an ink ribbon, and exoergic control of a thermal head, the keyboard which inputs an instruction and data into a printing control device, and the liquid crystal display section which displays the character string inputted from the keyboard.

[0005] This tape printer can set up the die length of the longitudinal direction of a label and width of face, and the string length printed in one label, and the consecutive number for every label can be printed in a releasing paper tape or a wire covering tube, or it can print it now at constant pitch in it. Moreover, when this tape printer sets up the die length of the longitudinal direction of a label, the string length printed by one label, a character size, a typeface, the number of printed lines, the count of printing, etc. in the mode in which the format of the printing character train to a label is set up, predetermined number printing of the same alphabetic data is carried out.

Moreover, if it has come to be able to carry out formatting and alphabetic data is inputted after this formatting so that the figure printed corresponding to the change in the sequence of a label may fluctuate when a figure is printed in a character string, consecutive numbers will be printed by the printing character train corresponding to the printing sequence of a label.

[0006] The alphabetic character inputted before so that it may move to left-hand side from the right-hand side of the liquid crystal display section, as the character string displayed is the magnitude which is about 5-10 characters and the alphabetic character of the liquid crystal display section of a tape printer inputted from a keyboard increases It has become, and if the number of input-statement characters exceeds the display limitation of the liquid crystal display section, the alphabetic character inputted before disappears from the frame on the left-hand side of the liquid crystal display section, and can input a new alphabetic character into the right-hand side of the liquid crystal display section one after another. [0007] in which the character string inputted previously one after another will appear on the other hand if cursor is moved to the frame on the left-hand side of the liquid crystal display section

[Problem(s) to be Solved by the Invention] By the way, when doing the alphabetic character input activity to many labels, the content of the character string block of the label inputted previously is checked, or the need of searching the block of the character string already used arises.

[0008] In such a case, although the character string inputted previously will appear a single character every by the conventional tape printer if cursor is moved to the edge on the left-hand side of the liquid crystal display section To be unable to move cursor to the target label easily, or move cursor to the block at the tail end from an intermediate block, if the number of blocks attains to a majority of 30 - 100 grades There is nonconformity that take time amount or the ranking of the block with which cursor is located becomes unknown.

[0009] The tape printer of this invention can check the ranking of the block with which cursor is located, when moving cursor, and aims at raising operability, such as retrieval and edit, while it makes it possible to perform migration during the block of cursor quickly earlier paying attention to such a problem.

[0010]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, the tape printer of claim 1 of this invention While the block which consists of two or more character strings makes the delimiter of blocks of an adjacent character string intervene and are held at an internal memory, [two or more] The block of at least 1 of the blocks held at said internal memory at the display which displays the block currently held at this internal memory, In the tape printer by which said delimiter and the cursor which shows the input location of the alphabetic character of a keyboard are displayed, said keyboard is characterized by having the rapid-traverse means of the cursor which was held at said internal memory and which moves cursor for two or more blocks of every.

[0011] According to the tape printer of claim 1, since cursor is moved for every block, the cursor to read-out of the block inputted previously and the block on the backside [after that] can be moved quickly, and operability improves.

[0012] Moreover, in the tape printer of claim 1, said keyboard specifies any [the ranking of two or more blocks held at said internal memory, or] of a character string they are, and the tape printer of claim 2 of this invention is characterized by having an assignment means to fast forward cursor to the block which has this specified ranking or character string.

[0013] Since according to the tape printer of claim 2 it specifies any of ranking or a character string they are among two or more blocks and cursor is fast forwarded, it can move to the block which has desired ranking or a desired character string immediately.

[0014] Furthermore, the tape printer of claim 3 is characterized by preparing the ranking display which displays the ranking of the block of a character string with which said cursor is located in said display in which tape printer of claim 1 or claim 2.

[0015] According to the tape printer of claim 3, the ranking of the block with which cursor is located can always be checked.

[0016]

[Embodiment of the Invention] Hereafter, the tape printer of the operation gestalt of this invention is explained based on a drawing.

[0017] Drawing 7 shows the appearance of the tape printer of this operation gestalt. A keyboard 2 and the liquid crystal display section 3 are formed in the sheathing case 4 at one, and, as for this tape printer 1, the printing section 5 is formed in the right-hand side upper

part of the sheathing case 4. The tape cassette 6 and the ink ribbon cassette 7 are formed in the printing section 5. Tape 6a and ink ribbon 7a of the tape cassette 6 are guided between the thermal head 8 and the platen roller 9. A thermal head 8 is arranged in the ink ribbon 7a side, and the platen roller 9 is arranged in the tape 6a side. The tape-cutter section 10 is arranged in the downstream of a thermal head 8 and a platen roller 9.

[0018] Selection of a cell and external power is possible for the power source of the tape printer 1, and the printing control section and interface which are mentioned later, the Motor Driver circuit, a motor, a drive, and a power source and others are arranged in the case 4.

[0019] A tape 6 has the adhesive tape with a releasing paper contained by the tape cassette, and the tube for electric wires contained by the tube cassette as an object for printing for forming a label, although the paper for labels was stuck through the binder on releasing papers, such as a silicon paper, and slitting is formed only in the paper part for labels here. In addition, you may be the label paper which stuck on the releasing paper the label beforehand formed in the shape of a label at constant pitch.

[0020] Discernment means, such as a discernment hole showing identification information to build in, such as a tape, a class of tube, and width of face, identification code, and a label, are recorded on the body of a cassette of the tape cassette 6 or the tube cassette for electric wires. The cassette discernment sensor 11 which reads the discernment means of the body of a cassette by the limit switch, a phot sensor, etc. is formed in the cassette holder section of the tape printer 1. Half cutting which cuts only the paper for the labels on a releasing paper with the tape-cutter section 10 can also be performed. 12 is the paper winding shaft of ink ribbon 7a.

[0021] CPU13 of the tape printer 1 consists of 16-bit microcomputers. To this CPU13 As shown in drawing 1, with ROM14 which memorizes the automatic executive program which starts a main program automatically in operation system or the main program list for label formation It has the you ZAZU memory 15 (internal memory) holding a main program and the read file data, or the data under alter operation from a keyboard 2, and the dictionary memory 16 which memorized an alphabetic character, the figure, the notation, the graphic form, the special symbol, etc.

[0022] Furthermore, the external memory 17 which memorizes the character string and printing format which are printed about one label about the label of created a large number as file data is connected to CPU13 through interface 17a. The printing control section 18 is constituted from a gestalt of this operation by CPU13, ROM14, the you ZAZU memory 15, and the dictionary memory 16.

[0023] As an input means to CPU14, the cassette discernment sensor 11 is connected with the keyboard 2 through interface 11a at CPU13 through the interface 19. The liquid crystal display section 3, the tape-feed motor 20, the thermal head 8, and the tape cutter 10 are connected to CPU14 as an output means through display driver circuit 3a, tape Motor Driver circuit 20a, head driver circuit 8a, and tape cutter driver circuit 10a, respectively. In addition, such display driver circuit 3a, tape Motor Driver circuit 20a, head driver circuit 8a, and tape cutter driver circuit 10a are equipped with the interface for I/O of a signal with CPU13.

[0024] Reading appearance of the main program for label formation of ROM14 is automatically carried out to the you ZAZU memory 15 by connection with a power source, and ON of a main switch, and the tape printer 1 starts by them. This main program has the input mode which inputs the character string of the label to print, the file management mode which output and input a character string data file between external memory 17 and the you ZAZU memory 15 (internal memory), the printing mode in which the input-statement character memorized by the you ZAZU memory 15 is printed, and the formatting mode of an input-statement character.

[0025] Standard format is beforehand set as the printing range list in the magnitude of one label, the magnitude of a printing character, the number of the character strings in one label, and one label about the printing location by input mode, and the tape printer 1 starts and becomes the input mode of standard format immediately the back. Being able to change input mode into file management mode, printing mode, and formatting mode by control-key 2a of a function key or others, standard format has come to be also able to perform format modification after an alphabetic character input.

[0026] In input mode, as shown in drawing 2 (a), based on standard format or the changed format, the format of the character string concerned is temporarily remembered to be the block (for example, A10, A12, A13 →) of a character string inputted from letter-key 2b of a keyboard 2, and delimiter P of adjacent blocks (for example, A12 and A13) by the you ZAZU memory 15.

[0027] The character string of two blocks is displayed on the liquid crystal display section 3, and delimiter P is expressed as this operation gestalt before the block of a character string. As shown in the liquid crystal display section 3 at drawing 2 R> 2 (a) - drawing 4 (b), the ranking display M of a block is formed in the liquid crystal display section 3, the alphabetic data pointed out with Cursor K among the alphabetic data held and memorized is displayed on the you ZAZU memory 15, and delimiter P which divides the blocks of the character string which adjoins Cursor K, and the ranking of the block of a character string with which cursor is located are displayed.

[0028] As block ranking is shown in drawing 2 (a), the ranking (for example, 28) it was remembered to be, the character string, for example, the block of "A13", with which Cursor K is located, as block ranking If (27) is displayed on the ranking display M and Cursor K moves to the block after one as it is shown in drawing 2 (b), if it is displayed on the ranking display M and Cursor K moves to the block before one, as shown in drawing 2 (c), (29) will be displayed on the ranking display M.

[0029] The actuation key prepared in the so-called personal computers, such as conte rule key 2a based on JIS code or an ASCII code, such as a Shift-key and an escape key, and the alphabet, letter-key 2b of a figure, etc. is prepared in the keyboard 2.

[0030] The delimiter Pn during a character string block other than a cursor movement key which moves cursor to this keyboard 2 for every single character is made into a reference point. The jump keys 22a and 22b (rapid-traverse means of cursor) which move Cursor K for any of delimiter Pn+1 after [of an in front of / one] delimiter Pn-1 or one being, In order to make a specific block jump Cursor K, the block assignment key 23 (assignment means) which specifies a block is formed.

[0031] In addition, the value of n of the subscript of delimiter P is the ranking number of a block of the character string currently held at the you ZAZU memory 15, is a number displayed on the ranking display M, and is not necessarily in agreement with the number of the numeric value (for example, A01, A02 →) printed by the label here.

[0032] Here, the display condition and flow chart in cursor jump mode during a block are explained to drawing 2 (a), (b), and the (c) list based on drawing 5. Cursor jump mode of the ranking assignment later mentioned in the cursor jump mode list during this block or character string assignment is performed under alphabetic character input mode, and after each cursor jump mode is completed, it returns to alphabetic character input mode again.

[0033] Jump processing is ended, if jump key 22a of the cursor which returns in the direction of a head of a sentence is inputted (S. 1), it searches whether delimiter Pn-1 exists in the left-hand side of the liquid crystal display section 3 (S. 2) and delimiter Pn-1 does not exist (S. 3) (S. 5). If delimiter Pn-1 exists in the left-hand side of the liquid crystal display section 3 (S. 3), as shown in drawing 2 (b), Cursor K will be moved to the delimiter Pn-1, a ranking number will be displayed on the character string of the block, and the ranking display M (S. 4), and processing will be ended (S. 5).

[0034] Jump processing is ended, if cursor jump key 22b which returns behind a sentence is inputted (S. 1), it searches whether delimiter Pn+1 exists in the left-hand side of the liquid crystal display section 3 (S. 2) and delimiter Pn+1 does not exist (S. 3) (S. 5). If delimiter Pn+1 exists in the left-hand side of the liquid crystal display section 3 (S. 3), as shown in drawing 2 (c), Cursor K is moved

to the delimiter Pn+1, and the character string and ranking number of the block will be displayed (S. 4), and it will end (S. 5).

[0035] In addition, although the halt location of Cursor K stops to delimiter P with the gestalt of this operation when moving Cursor K in the direction of a head or the direction of the rear of a character string, you may stop under a character string. Moreover, you may make it jump with the number of the request beyond two pieces or it not only performing the jump of Cursor K to every one delimiter P but by continuing pushing any of cursor jump key 22a or 22b they are. Retrieval and the transfer method of an alphabetic character can be performed such by jumping Cursor K.

[0036] Next, the cursor jump mode of ranking assignment or character string assignment is explained.

[0037] This tape printer 1 has the block assignment mode in which Cursor K is moved to the block containing the block or the specific character string of assignment ranking other than the above-mentioned jump mode. the cursor jump mode of this ranking assignment or character string assignment – which key stroke of the jump keys 22a and 22b – combining – also carrying out (for example, the block assignment key 23 being pressed, pushing any of the jump keys 22a and 22b) – although it is good, the mode which became independent of the jump mode of a block may be used, considering the easiness and quick nature of actuation. With the jump mode of the above-mentioned block, it consists of gestalten of this operation in the independent mode.

[0038] If the block assignment key 23 is pressed as shown in the flow chart of drawing 6 when the display condition of the liquid crystal display section 3 is in the condition which shows in drawing 3 (a) (S. 6), as shown in drawing 3 (b), the selection display of whether it moves to the block of specific ranking or to move to the block of a specific character string will appear in the liquid crystal display section 3 (S. 7). Actuation before and after the key of a character string to which it moves the cursor K of one character at a time performs this selection actuation among the keys of a keyboard 2.

[0039] If the ranking selection mode in which the delimiter Pn of a block of specific ranking is made to jump Cursor K here is chosen (S. 8), letter-face 3a of the liquid crystal display section 3 will move to the assignment column A of a block number, and will become the mode which inputs the ranking number of n of a delimiter Pn (S. 9). If a desired numeric value (for example, 16) is inputted into the assignment column A with letter-key 2b of a keyboard 2 and an Enter key is pushed, the block of at least the entry sequence held at the you ZAZU memory 15 of (the 16th character string) will be searched (S. 10). If there is a block of the corresponding ranking (S. 11), as shown in drawing 3 (c), Cursor K moves to the block of the ranking concerned, an applicable block and a ranking number (16) are displayed (S. 15), and ranking selection mode will be canceled and will return to alphabetic character input mode (S. 17).

Expressing the display without an applicable block in the liquid crystal display section 3 as step 11, if there is no block of applicable ranking, (S. 16) ranking selection mode is canceled and returns to alphabetic character input mode (S. 17).

[0040] In selection of step 8, if the character string selection mode in which the block of a specific character string is made to jump Cursor K by the above-mentioned key stroke is chosen, it will become the mode in which a character string is searched (S. 12). If a desired character string (for example, C01) is inputted into the character string block B and an Enter key is pushed with letter-key 2b of a keyboard 2 as shown in drawing 4 (a), the character string (C01) specified among the character strings held at the you ZAZU memory 15 will be searched (S. 13). While Cursor K will move to the block of the ranking concerned and displaying an applicable character string as shown in drawing 4 (b) if there is a block of the character string which corresponds in this retrieval (S. 14), the ranking number (for example, 50) of a block of that character string is displayed on the ranking display M (S. 15). In retrieval of step 13, if there is no block of the corresponding character string (S. 14), the display without an applicable block is displayed on the liquid crystal display section 3 (S. 16), and character string selection mode will be canceled and will return to alphabetic character input mode (S. 17).

[0041] With the gestalt of this operation, although the cursor jump keys 22a and 22b and the block assignment key 23 were independently formed in the keyboard 2, combination with various mode selection keys, such as the combination of the key in a keyboard 2, for example, which combination of a Shift-key and letter-key 2b, and an escape key, may perform jump migration of Cursor K. However, since the way which has set up the special jump keys 22a, 22b, and 23 does not require conversion and selection actuation of the edit mode like the tape printer of the gestalt of this operation, it is easy to use jump actuation of Cursor K early.

[0042] Formatting mode is performed by the function key in control-key 2a, or the key stroke of a keyboard 2, and a setting-out menu is displayed on the liquid crystal display section 7. the number of alphabetic characters of the character string block printed in formatting mode in the class of label, label length, the width of face of a label, the graphic size printed on a label, and 1 label, the printing location and the number of printed lines of the character string in a label, spacing of a character string, continuation printing of a label, and consecutive numbers – although setting out of printing, printing number of copies, etc. is attained, standard format is beforehand set as the main program.

[0043] For example, in standard format, if magnitude of a standard label is made into width of face of 11mm, and die length of 20mm, the character string line count of one line in this standard label, the character string of 10 characters, ten points of graphic sizes etc., etc. will be set up beforehand, and they will be printed by this standard mode. Of course, while being able to set up this formatting mode freely based on the magnitude of the label identified by the cassette discernment sensor 11, when a tape, a tube, etc. which are printed in one tape or the tube for electric wires when many labels are printed are the same, it can set up two or more kinds of format with which label length and a string length differ from a printing location etc., and can change format by the sequence of a label.

Format, alphabetic data, etc. which were set up are stored in the you ZAZU memory 15. In order to perform such formatting frequently, keys only for format modification, such as label length, a string length, and a printing location, may be prepared.

[0044] In printing mode, the existence of borderline printing which prints a vertical line, and a cut of tape 6a, or the existence of the half cutting which cuts only the adhesive tape of adhesive tape with a releasing paper can be set up on assignment of the label to [from the how many sheets] the how many sheets to print, printing number of copies, the initial value of the label to print, and the borderline of a label.

[0045] If printing mode is chosen by actuation of control-key 2a of a keyboard 2 and printing is performed, tape 6a and ink ribbon 7a of the printing section 5 will carry out synchronous transit, it will be sent between a thermal head 8 and a platen roller 9, and the character string of the label held at the you ZAZU memory 15 will be printed by tape 6a. In addition, in printing mode, if a borderline display, a cut or half cutting, etc. is chosen, after being printed by tape 6a, in the cutter section 10, a cut or half cutting of tape 6a, or vertical-line printing will be made.

[0046] In printing activation, CPU13 performs delivery control of tape 6a and ink ribbon 7a, and exoergic control of a thermal head 9 through the Motor Driver circuit 9 for carrying out synchronous transit of the tape-feed motor 20 and the ink ribbon delivery motor, and the head driver circuit 12. In printing mode, while tape 6a, or the tube for electric wires and ink ribbon 7a synchronize and are sent, exoergic control of the heater element of a thermal head 8 is carried out by head driver circuit 8a. In addition, the heater element of a thermal head 8 is located in a line crosswise [of tape 6a], and prints a character string corresponding to the feed rate of tape 6a and ink ribbon 7a. The alphabetic character by which hot printing is carried out to tape 6a from ink ribbon 7a has control data, such as a notation, an external-character notation, a graphic form, an image, and half tone dot meshing, etc. contained with this operation gestalt. In addition, you may print with an ink jet type head, a wire dot type head, etc. instead of a thermal head.

[0047] After printing, cut tape 6a or the tube for electric wires, or it is not cut in a predetermined cutting location as set up in printing mode. In printing of a label, when half cutting mode is chosen, CPU13 controls cutter driver circuit 10a, the gummed paper part of tape 6a is cut, and a releasing paper part is not cut. Since tape 6a or the tube for electric wires is separated by half cutting as a label, wearing to an electric-wire edge can be performed easily.

[0048] In addition, although the label printer of this invention is not limited to the tape printer of 1 operation gestalt mentioned above and various alterations are possible for the configuration of a printing control section, as long as it has the main configurations of this invention, it cannot be overemphasized that it is what also attains to them.

[0049]

[Effect of the Invention] According to the tape printer of claim 1 of this invention, in the alter operation of a character string, since cursor is moved for every delimiter of a block of a character string, the cursor to read-out of the block inputted previously and the block on the backside [after that] can be moved quickly, and operability, such as retrieval and edit, can be raised.

[0050] Moreover, if the block of two or more character strings held at the internal memory is specified like the tape printer of claim 2 of this invention, an assignment means to fast forward cursor to this specified block is established, a block is specified and cursor is fast forwarded, the block which has desired ranking or a desired character string can be checked immediately.

[0051] If the ranking display which displays the ranking of the block of a character string with which said cursor is located in a display in which tape printer of claim 1 or claim 2 like the tape printer of claim 3 is prepared, the ranking of the block with which cursor is located can always be checked, and operability will improve.

[Translation done.]

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the tape printer which can form the fragment printed like the label or the tape.

[0002]

[Description of the Prior Art] In order to mistake the defined electric wire for each terminals, such as a switchboard of a power-transmission-and-distribution facility, and to connect with them from the former that there is nothing, the label etc. is prepared in both terminal and electric wire at each, and considering as the collating means in the case of connection is known.

[0003] The tape printer which prints an alphabetic character, a notation, etc. in adhesive tape and the tube for electric wires with a releasing paper, and forms a label recently for such collating is marketed.

[0004] This kind of tape printer is equipped with the cassette of adhesive tape or the tube for electric wires, the printer which consists of an ink ribbon and a thermal head, the printing control device which performs transit control of a tape and an ink ribbon, and exoergic control of a thermal head, the keyboard which inputs an instruction and data into a printing control device, and the liquid crystal display section which displays the character string inputted from the keyboard.

[0005] This tape printer can set up the die length of the longitudinal direction of a label and width of face, and the string length printed in one label, and the consecutive number for every label can be printed in a releasing paper tape or a wire covering tube, or it can print it now at constant pitch in it. Moreover, when this tape printer sets up the die length of the longitudinal direction of a label, the string length printed by one label, a character size, a typeface, the number of printed lines, the count of printing, etc. in the mode in which the format of the printing character train to a label is set up, predetermined number printing of the same alphabetic data is carried out. Moreover, if it has come to be able to carry out formatting and alphabetic data is inputted after this formatting so that the figure printed corresponding to the change in the sequence of a label may fluctuate when a figure is printed in a character string, consecutive numbers will be printed by the printing character train corresponding to the printing sequence of a label.

[0006] The alphabetic character inputted before so that it may move to left-hand side from the right-hand side of the liquid crystal display section, as the character string displayed is the magnitude which is about 5-10 characters and the alphabetic character of the liquid crystal display section of a tape printer inputted from a keyboard increases. It has become, and if the number of input-statement characters exceeds the display limitation of the liquid crystal display section, the alphabetic character inputted before disappears from the frame on the left-hand side of the liquid crystal display section, and can input a new alphabetic character into the right-hand side of the liquid crystal display section one after another. [0007] In which the character string inputted previously one after another will appear on the other hand if cursor is moved to the frame on the left-hand side of the liquid crystal display section.

[Problem(s) to be Solved by the Invention] By the way, when doing the alphabetic character input activity to many labels, the content of the character string block of the label inputted previously is checked, or the need of searching the block of the character string already used arises.

[0008] In such a case, although the character string inputted previously will appear a single character every by the conventional tape printer if cursor is moved to the edge on the left-hand side of the liquid crystal display section. To be unable to move cursor to the target label easily, or move cursor to the block at the tail end from an intermediate block, if the number of blocks attains to a majority of 30 - 100 grades. There is nonconformity that take time amount or the ranking of the block with which cursor is located becomes unknown.

[0009] The tape printer of this invention can check the ranking of the block with which cursor is located, when moving cursor, and aims at raising operability, such as retrieval and edit, while it makes it possible to perform migration during the block of cursor quickly earlier paying attention to such a problem.

[0010]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, the tape printer of claim 1 of this invention. While the block which consists of two or more character strings makes the delimiter of blocks of an adjacent character string intervene and are held at an internal memory, [two or more] The block of at least 1 of the blocks held at said internal memory at the display which displays the block currently held at this internal memory, In the tape printer by which said delimiter and the cursor which shows the input location of the alphabetic character of a keyboard are displayed, said keyboard is characterized by having the rapid-traverse means of the cursor which was held at said internal memory and which moves cursor for two or more blocks of every.

[0011] According to the tape printer of claim 1, since cursor is moved for every block, the cursor to read-out of the block inputted previously and the block on the backside [after that] can be moved quickly, and operability improves.

[0012] Moreover, in the tape printer of claim 1, said keyboard specifies any [the ranking of two or more blocks held at said internal memory, or] of a character string they are, and the tape printer of claim 2 of this invention is characterized by having an assignment means to fast forward cursor to the block which has this specified ranking or character string.

[0013] Since according to the tape printer of claim 2 it specifies any of ranking or a character string they are among two or more blocks and cursor is fast forwarded, it can move to the block which has desired ranking or a desired character string immediately.

[0014] Furthermore, the tape printer of claim 3 is characterized by preparing the ranking display which displays the ranking of the block of a character string with which said cursor is located in said display in which tape printer of claim 1 or claim 2.

[0015] According to the tape printer of claim 3, the ranking of the block with which cursor is located can always be checked.

[0016]

[Embodiment of the Invention] Hereafter, the tape printer of the operation gestalt of this invention is explained based on a drawing.

[0017] Drawing 7 shows the appearance of the tape printer of this operation gestalt. A keyboard 2 and the liquid crystal display section 3 are formed in the sheathing case 4 at one, and, as for this tape printer 1, the printing section 5 is formed in the right-hand side upper

part of the sheathing case 4. The tape cassette 6 and the ink ribbon cassette 7 are formed in the printing section 5. Tape 6a and ink ribbon 7a of the tape cassette 6 are guided between the thermal head 8 and the platen roller 9. A thermal head 8 is arranged in the ink ribbon 7a side, and the platen roller 9 is arranged in the tape 6a side. The tape-cutter section 10 is arranged in the downstream of a thermal head 8 and a platen roller 9.

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[0020] Discernment means, such as a discernment hole showing identification information to build in, such as a tape, a class of tube, and width of face, identification code, and a label, are recorded on the body of a cassette of the tape cassette 6 or the tube cassette for electric wires. The cassette discernment sensor 11 which reads the discernment means of the body of a cassette by the limit switch, a phot sensor, etc. is formed in the cassette holder section of the tape printer 1. Half cutting which cuts only the paper for the labels on a releasing paper with the tape-cutter section 10 can also be performed. 12 is the paper winding shaft of ink ribbon 7a.

[0021] CPU13 of the tape printer 1 consists of 16-bit microcomputers. To this CPU13 As shown in drawing 1, with ROM14 which memorizes the automatic executive program which starts a main program automatically in operation system or the main program list for label formation It has the you ZAZU memory 15 (internal memory) holding a main program and the read file data, or the data under alter operation from a keyboard 2, and the dictionary memory 16 which memorized an alphabetic character, the figure, the notation, the graphic form, the special symbol, etc.

[0022] Furthermore, the external memory 17 which memorizes the character string and printing format which are printed about one label about the label of created a large number as file data is connected to CPU13 through interface 17a. The printing control section 18 is constituted from a gestalt of this operation by CPU13, ROM14, the you ZAZU memory 15, and the dictionary memory 16.

[0023] As an input means to CPU14, the cassette discernment sensor 11 is connected with the keyboard 2 through interface 11a at CPU13 through the interface 19. The liquid crystal display section 3, the tape-feed motor 20, the thermal head 8, and the tape cutter 10 are connected to CPU14 as an output means through display driver circuit 3a, tape Motor Driver circuit 20a, head driver circuit 8a, and tape cutter driver circuit 10a, respectively. In addition, such display driver circuit 3a, tape Motor Driver circuit 20a, head driver circuit 8a, and tape cutter driver circuit 10a are equipped with the interface for I/O of a signal with CPU13.

[0024] Reading appearance of the main program for label formation of ROM14 is automatically carried out to the you ZAZU memory 15 by connection with a power source, and ON of a main switch, and the tape printer 1 starts by them. This main program has the input mode which inputs the character string of the label to print, the file management mode which output and input a character string data file between external memory 17 and the you ZAZU memory 15 (internal memory), the printing mode in which the input-statement character memorized by the you ZAZU memory 15 is printed, and the formatting mode of an input-statement character.

[0025] Standard format is beforehand set as the printing range list in the magnitude of one label, the magnitude of a printing character, the number of the character strings in one label, and one label about the printing location by input mode, and the tape printer 1 starts and becomes the input mode of standard format immediately the back. Being able to change input mode into file management mode, printing mode, and formatting mode by control-key 2a of a function key or others, standard format has come to be also able to perform format modification after an alphabetic character input.

[0026] In input mode, as shown in drawing 2 (a), based on standard format or the changed format, the format of the character string concerned is temporarily remembered to be the block (for example, A10, A12, A13 →) of a character string inputted from letter-key 2b of a keyboard 2, and delimiter P of adjacent blocks (for example, A12 and A13) by the you ZAZU memory 15.

[0027] The character string of two blocks is displayed on the liquid crystal display section 3, and delimiter P is expressed as this operation gestalt before the block of a character string. As shown in the liquid crystal display section 3 at drawing 2 R> 2 (a) - drawing 4 (b), the ranking display M of a block is formed in the liquid crystal display section 3, the alphabetic data pointed out with Cursor K among the alphabetic data held and memorized is displayed on the you ZAZU memory 15, and delimiter P which divides the blocks of the character string which adjoins Cursor K, and the ranking of the block of a character string with which cursor is located are displayed.

[0028] As block ranking is shown in drawing 2 (a), the ranking (for example, 28) it was remembered to be, the character string, for example, the block of "A13", with which Cursor K is located, as block ranking If (27) is displayed on the ranking display M and Cursor K moves to the block after one as it is shown in drawing 2 (b), if it is displayed on the ranking display M and Cursor K moves to the block before one, as shown in drawing 2 (c), (29) will be displayed on the ranking display M.

[0029] The actuation key prepared in the so-called personal computers, such as conte rule key 2a based on JIS code or an ASCII code, such as a Shift-key and an escape key, and the alphabet, letter-key 2b of a figure, etc. is prepared in the keyboard 2.

[0030] The delimiter Pn during a character string block other than a cursor movement key which moves cursor to this keyboard 2 for every single character is made into a reference point. The jump keys 22a and 22b (rapid-traverse means of cursor) which move Cursor K for any of delimiter Pn+1 after [of an in front of / one] delimiter Pn-1 or one being, In order to make a specific block jump Cursor K, the block assignment key 23 (assignment means) which specifies a block is formed.

[0031] In addition, the value of n of the subscript of delimiter P is the ranking number of a block of the character string currently held at the you ZAZU memory 15, is a number displayed on the ranking display M, and is not necessarily in agreement with the number of the numeric value (for example, A01, A02 →) printed by the label here.

[0032] Here, the display condition and flow chart in cursor jump mode during a block are explained to drawing 2 (a), (b), and the (c) list based on drawing 5. Cursor jump mode of the ranking assignment later mentioned in the cursor jump mode list during this block or character string assignment is performed under alphabetic character input mode, and after each cursor jump mode is completed, it returns to alphabetic character input mode again.

[0033] Jump processing is ended, if jump key 22a of the cursor which returns in the direction of a head of a sentence is inputted (S. 1), it searches whether delimiter Pn-1 exists in the left-hand side of the liquid crystal display section 3 (S. 2) and delimiter Pn-1 does not exist (S. 3) (S. 5). If delimiter Pn-1 exists in the left-hand side of the liquid crystal display section 3 (S. 3), as shown in drawing 2 (b), Cursor K will be moved to the delimiter Pn-1, a ranking number will be displayed on the character string of the block, and the ranking display M (S. 4), and processing will be ended (S. 5).

[0034] Jump processing is ended, if cursor jump key 22b which returns behind a sentence is inputted (S. 1), it searches whether delimiter Pn+1 exists in the left-hand side of the liquid crystal display section 3 (S. 2) and delimiter Pn+1 does not exist (S. 3) (S. 5). If delimiter Pn+1 exists in the left-hand side of the liquid crystal display section 3 (S. 3), as shown in drawing 2 (c), Cursor K is moved

to the delimiter Pn+1, and the character string and ranking number of the block will be displayed (S. 4), and it will end (S. 5).

[0035] In addition, although the halt location of Cursor K stops to delimiter P with the gestalt of this operation when moving Cursor K in the direction of a head or the direction of the rear of a character string, you may stop under a character string. Moreover, you may make it jump with the number of the request beyond two pieces or it not only performing the jump of Cursor K to every one delimiter P but by continuing pushing any of cursor jump key 22a or 22b they are. Retrieval and the transfer method of an alphabetic character can be performed such by jumping Cursor K.

[0036] Next, the cursor jump mode of ranking assignment or character string assignment is explained.

[0037] This tape printer 1 has the block assignment mode in which Cursor K is moved to the block containing the block or the specific character string of assignment ranking other than the above-mentioned jump mode. the cursor jump mode of this ranking assignment or character string assignment – which key stroke of the jump keys 22a and 22b – combining – also carrying out (for example, the block assignment key 23 being pressed, pushing any of the jump keys 22a and 22b) – although it is good, the mode which became independent of the jump mode of a block may be used, considering the easiness and quick nature of actuation. With the jump mode of the above-mentioned block, it consists of gestalten of this operation in the independent mode.

[0038] If the block assignment key 23 is pressed as shown in the flow chart of drawing 6 when the display condition of the liquid crystal display section 3 is in the condition which shows in drawing 3 (a) (S. 6), as shown in drawing 3 (b), the selection display of whether it moves to the block of specific ranking or to move to the block of a specific character string will appear in the liquid crystal display section 3 (S. 7). Actuation before and after the key of a character string to which it moves the cursor K of one character at a time performs this selection actuation among the keys of a keyboard 2.

[0039] If the ranking selection mode in which the delimiter Pn of a block of specific ranking is made to jump Cursor K here is chosen (S. 8), letter-face 3a of the liquid crystal display section 3 will move to the assignment column A of a block number, and will become the mode which inputs the ranking number of n of a delimiter Pn (S. 9). If a desired numeric value (for example, 16) is inputted into the assignment column A with letter-key 2b of a keyboard 2 and an Enter key is pushed, the block of at least the entry sequence held at the you ZAZU memory 15 of (the 16th character string) will be searched (S. 10). If there is a block of the corresponding ranking (S. 11), as shown in drawing 3 (c), Cursor K moves to the block of the ranking concerned, an applicable block and a ranking number (16) are displayed (S. 15), and ranking selection mode will be canceled and will return to alphabetic character input mode (S. 17). Expressing the display without an applicable block in the liquid crystal display section 3 as step 11, if there is no block of applicable ranking, (S. 16) ranking selection mode is canceled and returns to alphabetic character input mode (S. 17).

[0040] In selection of step 8, if the character string selection mode in which the block of a specific character string is made to jump Cursor K by the above-mentioned key stroke is chosen, it will become the mode in which a character string is searched (S. 12). If a desired character string (for example, C01) is inputted into the character string block B and an Enter key is pushed with letter-key 2b of a keyboard 2 as shown in drawing 4 (a), the character string (C01) specified among the character strings held at the you ZAZU memory 15 will be searched (S. 13). While Cursor K will move to the block of the ranking concerned and displaying an applicable character string as shown in drawing 4 (b) if there is a block of the character string which corresponds in this retrieval (S. 14), the ranking number (for example, 50) of a block of that character string is displayed on the ranking display M (S. 15). In retrieval of step 13, if there is no block of the corresponding character string (S. 14), the display without an applicable block is displayed on the liquid crystal display section 3 (S. 16), and character string selection mode will be canceled and will return to alphabetic character input mode (S. 17).

[0041] With the gestalt of this operation, although the cursor jump keys 22a and 22b and the block assignment key 23 were independently formed in the keyboard 2, combination with various mode selection keys, such as the combination of the key in a keyboard 2, for example, which combination of a Shift-key and letter-key 2b, and an escape key, may perform jump migration of Cursor K. However, since the way which has set up the special jump keys 22a, 22b, and 23 does not require conversion and selection actuation of the edit mode like the tape printer of the gestalt of this operation, it is easy to use jump actuation of Cursor K early.

[0042] Formatting mode is performed by the function key in control-key 2a, or the key stroke of a keyboard 2, and a setting-out menu is displayed on the liquid crystal display section 7. the number of alphabetic characters of the character string block printed in formatting mode in the class of label, label length, the width of face of a label, the graphic size printed on a label, and 1 label, the printing location and the number of printed lines of the character string in a label, spacing of a character string, continuation printing of a label, and consecutive numbers – although setting out of printing, printing number of copies, etc. is attained, standard format is beforehand set as the main program.

[0043] For example, in standard format, if magnitude of a standard label is made into width of face of 11mm, and die length of 20mm, the character string line count of one line in this standard label, the character string of 10 characters, ten points of graphic sizes etc., etc. will be set up beforehand, and they will be printed by this standard mode. Of course, while being able to set up this formatting mode freely based on the magnitude of the label identified by the cassette discernment sensor 11, when a tape, a tube, etc. which are printed in one tape or the tube for electric wires when many labels are printed are the same, it can set up two or more kinds of format with which label length and a string length differ from a printing location etc., and can change format by the sequence of a label. Format, alphabetic data, etc. which were set up are stored in the you ZAZU memory 15. In order to perform such formatting frequently, keys only for format modification, such as label length, a string length, and a printing location, may be prepared.

[0044] In printing mode, the existence of borderline printing which prints a vertical line, and a cut of tape 6a, or the existence of the half cutting which cuts only the adhesive tape of adhesive tape with a releasing paper can be set up on assignment of the label to [from the how many sheets] the how many sheets to print, printing number of copies, the initial value of the label to print, and the borderline of a label.

[0045] If printing mode is chosen by actuation of control-key 2a of a keyboard 2 and printing is performed, tape 6a and ink ribbon 7a of the printing section 5 will carry out synchronous transit, it will be sent between a thermal head 8 and a platen roller 9, and the character string of the label held at the you ZAZU memory 15 will be printed by tape 6a. In addition, in printing mode, if a borderline display, a cut or half cutting, etc. is chosen, after being printed by tape 6a, in the cutter section 10, a cut or half cutting of tape 6a, or vertical-line printing will be made.

[0046] In printing activation, CPU13 performs delivery control of tape 6a and ink ribbon 7a, and exoergic control of a thermal head 9 through the Motor Driver circuit 9 for carrying out synchronous transit of the tape-feed motor 20 and the ink ribbon delivery motor, and the head driver circuit 12. In printing mode, while tape 6a, or the tube for electric wires and ink ribbon 7a synchronize and are sent, exoergic control of the heater element of a thermal head 8 is carried out by head driver circuit 8a. In addition, the heater element of a thermal head 8 is located in a line crosswise [of tape 6a], and prints a character string corresponding to the feed rate of tape 6a and ink ribbon 7a. The alphabetic character by which hot printing is carried out to tape 6a from ink ribbon 7a has control data, such as a notation, an external-character notation, a graphic form, an image, and half tone dot meshing, etc. contained with this operation gestalt. In addition, you may print with an ink jet type head, a wire dot type head, etc. instead of a thermal head.

[0047] After printing, cut tape 6a or the tube for electric wires, or it is not cut in a predetermined cutting location as set up in printing mode. In printing of a label, when half cutting mode is chosen, CPU13 controls cutter driver circuit 10a, the gummed paper part of tape 6a is cut, and a releasing paper part is not cut. Since tape 6a or the tube for electric wires is separated by half cutting as a label, wearing to an electric-wire edge can be performed easily.

[0048] In addition, although the label printer of this invention is not limited to the tape printer of 1 operation gestalt mentioned above and various alterations are possible for the configuration of a printing control section, as long as it has the main configurations of this invention, it cannot be overemphasized that it is what also attains to them.

[0049]

[Effect of the Invention] According to the tape printer of claim 1 of this invention, in the alter operation of a character string, since cursor is moved for every delimiter of a block of a character string, the cursor to read-out of the block inputted previously and the block on the backside [after that] can be moved quickly, and operability, such as retrieval and edit, can be raised.

[0050] Moreover, if the block of two or more character strings held at the internal memory is specified like the tape printer of claim 2 of this invention, an assignment means to fast forward cursor to this specified block is established, a block is specified and cursor is fast forwarded, the block which has desired ranking or a desired character string can be checked immediately.

[0051] If the ranking display which displays the ranking of the block of a character string with which said cursor is located in a display in which tape printer of claim 1 or claim 2 like the tape printer of claim 3 is prepared, the ranking of the block with which cursor is located can always be checked, and operability will improve.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The block circuit diagram of the tape printer concerning the gestalt of 1 operation of this invention

[Drawing 2] Drawing 2 (a) is the block of a character string and the explanatory view of cursor which are displayed on the liquid crystal display section.

Drawing 2 (b) is an explanatory view in the condition of making one block move of cursor of (a) into front.

Drawing 2 (c) is an explanatory view in the condition of making one block move of cursor of (a) into the back.

[Drawing 3] Drawing 3 (a) is the example of a display of the liquid crystal display section before making designated block of a block assignment key jump.

Drawing 3 (b) is the example of a display of the liquid crystal display section when making a block assignment key turn on and inputting ranking.

Drawing 3 (c) is the example of a display of the liquid crystal display section at the time of making designated block of a block assignment key jump.

[Drawing 4] Drawing 4 (a) is the example of a display of the liquid crystal display section when making a block assignment key turn on and specifying a retrieval alphabetic character.

Drawing 4 (b) is the example of a display of the liquid crystal display section at the time of making the assignment retrieval alphabetic character of a block assignment key jump.

[Drawing 5] The flow chart of the program in cursor rapid-traverse mode

[Drawing 6] The flow chart of a program [in / it is in cursor rapid-traverse mode, and / block ranking assignment]

[Drawing 7] Drawing showing the appearance configuration of the tape printer in the gestalt of operation of this invention

[Description of Notations]

1 Tape Printer

2 Keyboard

3 Liquid Crystal Display Section

4 Sheathing Case

5 Printing Section

6 Tape Cassette

7 Ink Ribbon Cassette

8 Thermal Head

9 Platen Roller

10 Tape Cutter

13 CPU

14 ROM

15 You ZAZU Memory (Internal Memory)

17 External Memory

22a Left jump key

22B Right jump key

23 Block Assignment Key

[Translation done.]

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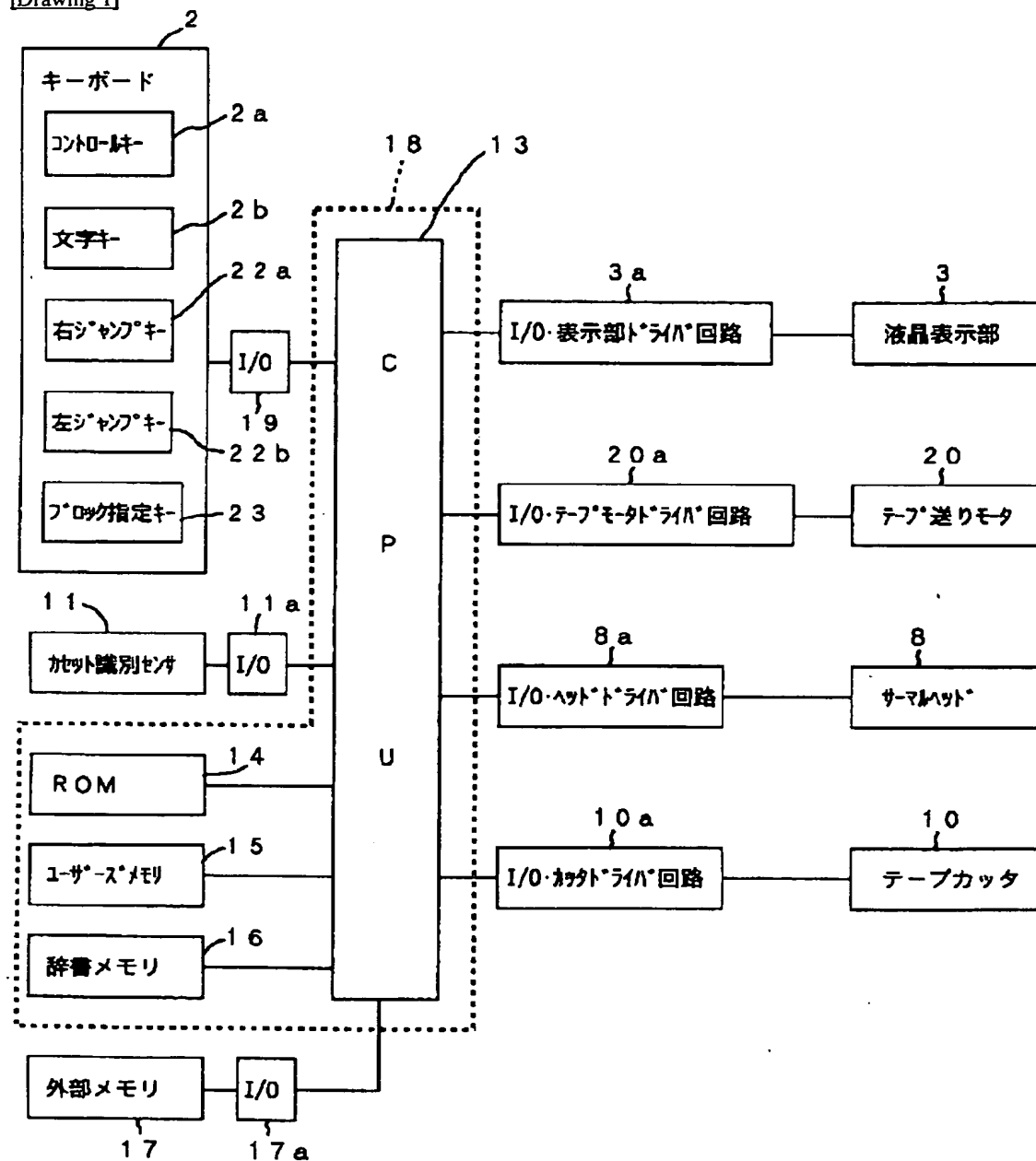
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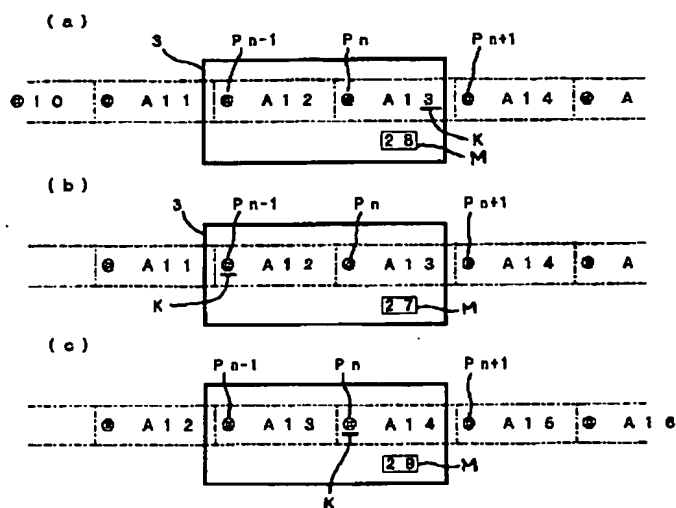
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DRAWINGS

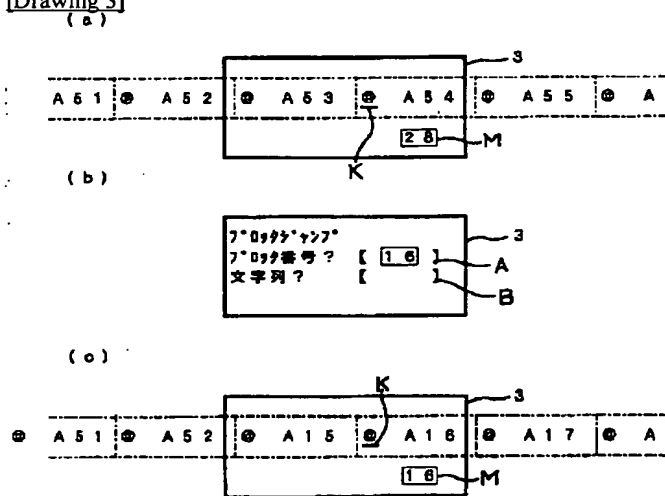
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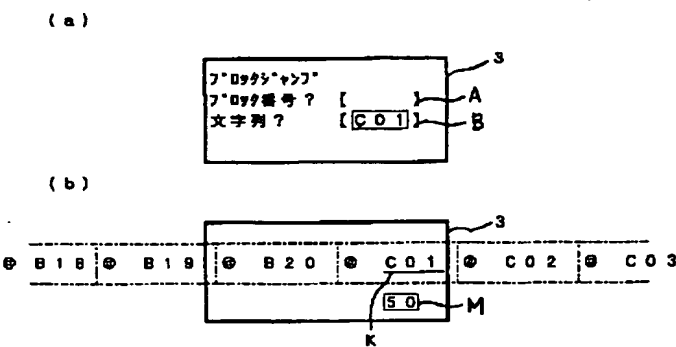
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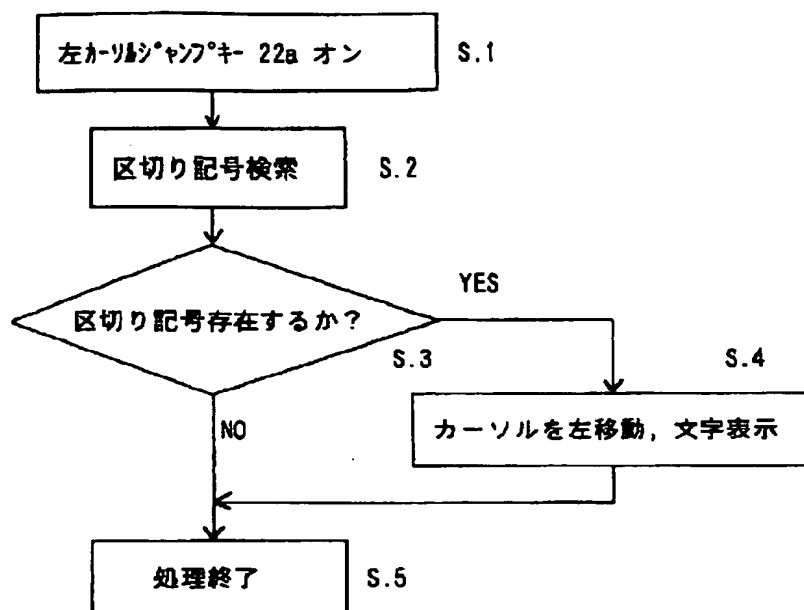
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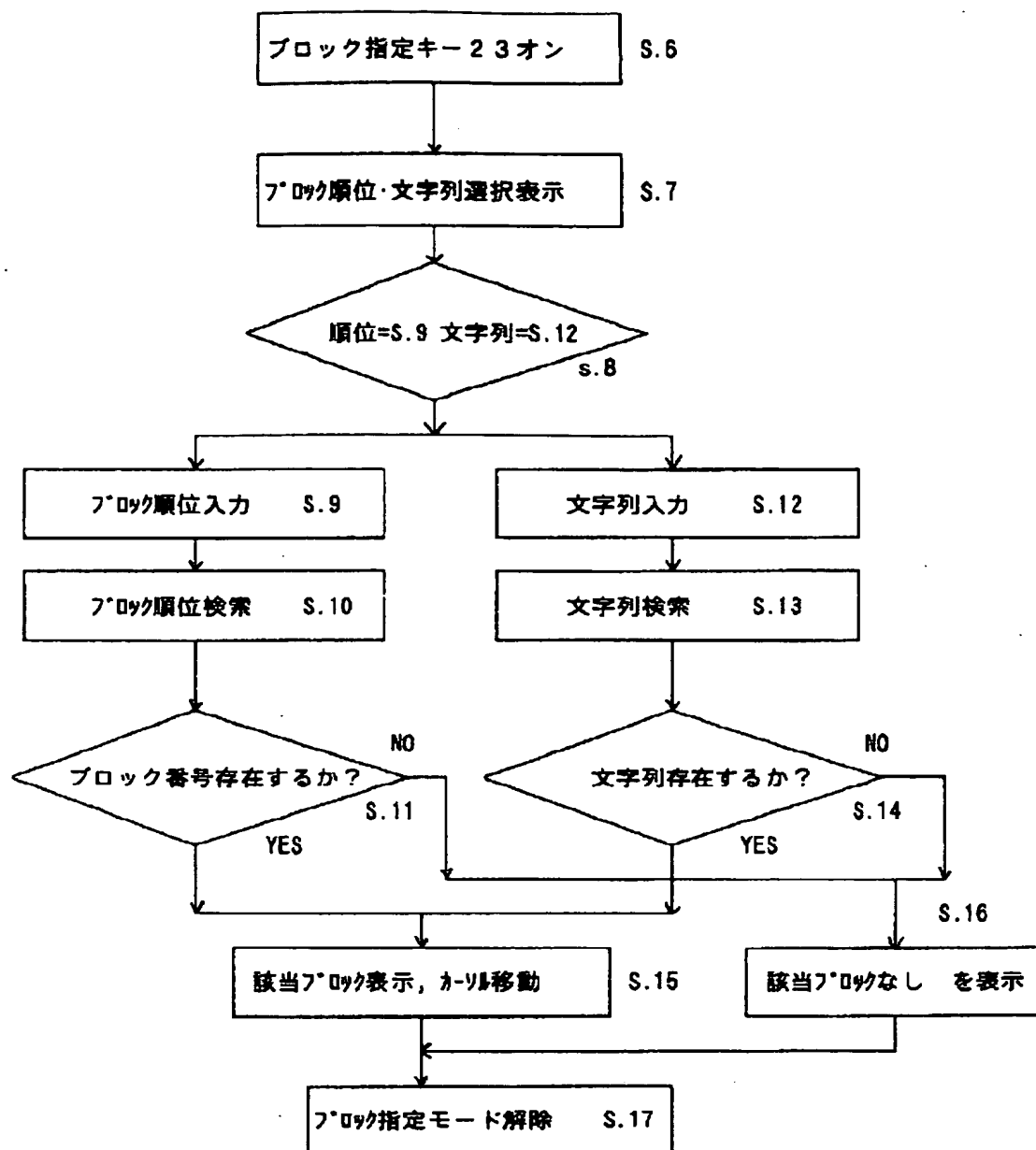
[Drawing 4]



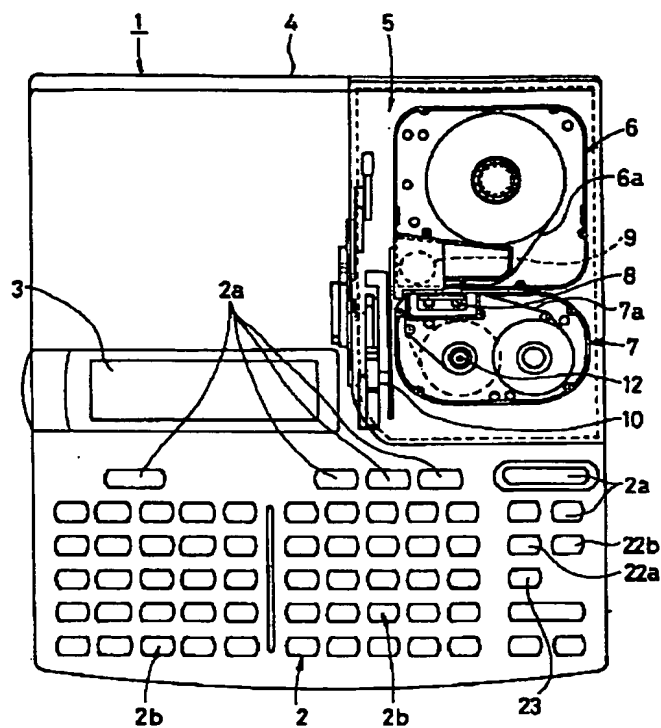
[Drawing 5]



[Drawing 6]



[Drawing 7]



[Translation done.]